7.0 HIGH-SPEED TRAIN SYSTEM RECOMMENDATIONS

The recommendations for the alignments for continued investigation within the four regional corridors directly impact the selection of the type of high-speed train system to be used in California. Alignment and station screening recommendations have led to the train system recommendations described in the following sections.

7.1 High-Speed Train Systems for Further Evaluation

The following types of high-speed trains should be further evaluated (see Figure 7-1 for corridors to be further investigated):

- **Steel-Wheel-on-Steel-Rail (electrified) that can share tracks with other services at reduced speeds in heavily urbanized areas**: This type of high-speed train technology would link the San Francisco Bay Area, Sacramento, the Central Valley, Los Angeles, Orange County, the Inland Empire and San Diego (via the Inland Empire).

For high-speed train service on the San Francisco Peninsula, only the Caltrain Corridor shared-track option is recommended for further evaluation. Sharing track with Caltrain would require that the steel-wheel-on-rail high-speed train technology be selected if the high-speed train system is to serve San Francisco without a transfer. Moreover, the high-speed trains would need to be compatible with the other trains sharing the tracks. Sharing track with Caltrain is the only realistic alternative for a direct link to San Francisco. To meet the objectives of the Authority's Final Business Plan, the statewide high-speed train system should directly link to downtown San Francisco, and San Francisco International Airport (SFO). Both the Federal Railroad Administration (FRA) and high-speed train manufacturers have indicated that they believe that steel-wheel-on-steel-rail trains capable of meeting the Authority's performance standards will be able to meet or exceed FRA standards for shared-track operations in California.

Sharing tracks with existing services may be required in other heavily urbanized portions of the statewide high-speed train network. High-speed trains must also share tracks with existing services for the LOSSAN alignment alternative from LA Union Station to Irvine. The operators of the Capitol Corridor and the City of Oakland have expressed interest in incremental improvements and high-speed trains sharing track with the Capitol Corridor service for the East Bay alternatives between San Jose and Oakland. Continued investigation of the rail corridors between Los Angeles and Riverside should include the potential for sharing tracks with Metrolink.

- **Steel-Wheel-on-Steel-Rail (non-electrified) that would share tracks with other services:** This type of high-speed train technology would link LA Union Station to San Diego via Orange County. This service would require a transfer to the electrified high-speed train service (at LA Union Station or Orange County) for trips north of Union Station.

From Irvine to San Diego, only non-electrified steel-wheel-on-steel-rail high-speed train technology should be further investigated. The travel time differential between non-electrified and electrified high-speed train technology in not significant along this heavily constrained right-of-way. For express service between Irvine and San Diego (78 miles/125.6 km), electrified high-speed trains would only reduce fossil fuel travel times by less than 3 minutes. Moreover, the visual impacts of overhead catenary are not acceptable to the coastal communities. The prior "bullet train" proposal and feasibility studies of the Intercity High-Speed Train Commission and the Authority as well as this environmental work have

Figure 7-1
High-Speed Trains Systems for Continued Investigation

August 31, 2001

Legend

Non-electric High-Speed Train Service: steel-wheel-on-steel rail, Maximum speeds 150 mph or less

Electrified High-Speed Train Service: steel-wheel-on-stegel-rail, Maximum speeds 200mph or greater, fully grade-separated, Capable of sharing tracks with other services in urban segments

demonstrated the vocal opposition to the overhead catenary needed for the electrified high-speed train technology. The consensus in the San Diego region (SANDAG, transportation agencies, cities and the public) is that the LOSSAN corridor should be an incrementally improved non-electrified service (that would require a transfer to the statewide high-speed train network) and that the I-15 corridor would provide direct, high-speed train service on new infrastructure to San Diego via the Inland Empire. Therefore, high-speed train service from San Diego via the LOSSAN Corridor would require a transfer to the electrified high-speed train service (at LA Union Station or Orange County) for trips north of Union Station.

7.2 High-Speed Train Systems to be Eliminated (No Further Evaluation)

The following high-speed train systems do not need further investigation:

- **Steel-Wheel-on-Steel-Rail (electrified) that must operate on completely separate tracks from other services regardless of speed:** This type of high-speed train system would not be investigated further for a statewide intercity high-speed train network for California.

Completely dedicated (separate track) steel-wheel-on-steel-rail technology would prohibit direct high-speed train service to San Francisco, SFO and the SF Peninsula. It would also eliminate the potential use of the LOSSAN rail alignment for a drect connection between LA Union Station and Orange County. Furthermore, infrastructure for completely dedicated (separate track) steel-wheel-on-steel-rail technology cannot be incrementally improved.

- **Magnetic Levitation technology (Maglev):** This type of high-speed train system would not be investigated further for a statewide intercity high-speed train network for California.

Maglev would prohibit direct high-speed train service to San Francisco, SFO and the SF Peninsula. It would also eliminate the potential use of the LOSSAN rail alignment for a direct connection between LA Union Station and Orange County. Furthermore, incrementally improved steel-wheel-on-steel-rail tracks cannot be used by Maglev trains.